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BUREAU OF LAND MANAGEMENT

COLORADO

AUTOMATED LAND AND MINERAL RECORDS SYSTEM

EQUIPMENT ANALYSIS

MARCH 1, 1985

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1985

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BUREAU OF LAND MANAGEMENT
COLORADO STATE OFFICE
ALMRS EQUIPMENT ANALYSIS
FOR FISCAL YEARS 1985-1990
MARCH 1, 1985

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SUMMARY

In order to fullfill the mission of the Automated Land and Mineral Records System (ALMRS),"....to develop and implement an efficient system for recording, maintaining and retrieving: land description, ownership and use information in support of federal programs and public users of such records..." present and future computer hardware needs for Colorado State and field offices requiring access to ALMRS data must be analyzed.

Viewing ALMRS-related hardware separately is necessary because of the pervasive nature of land and mineral records. The emphasis on the analysis then, is access to ALMRS rather than a full-scale software/hardware analysis which is presently underway by the ALMRS Project Office.

The essence of the justification for additional equipment is described in the "Organizational Analysis" section where terminal and printer needs are set forth and the "ADP/Telecommunications Analysis" section where CPU, other support peripherals and additional telecommunications needs are analyzed.

Needs are based upon information in ALMRS Life Cycle Management which has user service and system performance goals. They are also based upon ALMRS objectives described in the following "Introduction" section and qualified by the "Assumptions" section.

The analysis spans five years commencing with FY 85. Costs for terminals, printers, telecommunications, CPU channels, maintenance, ADP workmonth support and miscellaneous items for Level I (minimal statewide operation) amounts to $480,000. For Level II (end of five year period and includes Level I cost) the cost amounts to $775,000.

As a result of the analysis, an upgrade of Colorado's Level 6 computer is indicated to achieve full ALMRS Level I requirements. One solution which would also satisfy Level II requirements and other program applications is the installation of a low-end mainframe with upgrade capabilities. This option has not been costed out in the analysis.

Serious consideration must be directed by management toward the minimum level at which ALMRS can efficiently and effectively function. Competition with other Bureau hardware and program application needs speaks to accelerated modernization to avoid unnecessary expenditures of dollars, time and energy for patchwork, incompatible systems.

Keyed to the ALMRS mission statement are the system objectives:

- streamline responses to land and mineral inquiries
- facilitate processing of applications and permits
- improve access to ownership and use records
- improve physical security of records, and protect proprietary and confidential information
- ensure accuracy and consistancy of data
- improve the Bureau's planning, tracking and evaluation of its programs
- reduce costs of records management

ALMRS as an integrated system will automate some records while using micrographics and hard copy for others, based upon what is most efficient for each type of record. The system will be utilized for case recording and reporting (being done presently with some limitations), aid in case processing, provide for aggregate reporting, and as development occurs, will have both written and graphic displays, universal access, and be able to interface with other systems

There will be three parts to the system. Developmental work is required for some of the components, while others are allready operational:

I ALMRS
  A Automated data
    - land description
    - ownership and status
    - serial number log
    - stipulations
    - regulation reference file
  B Manual data
    - casefiles
    - survey plats and notes
    - control document index
    - reference information
II Interfaced files (BLM)
    - geographic coordinates
    - resource data
    - bond
    - surety
    - qualification
    - master name
III Interfaced systems
  A BLM
    - financial management
    - minerals system I
    - solid leasable minerals system
    - simultaneous oil and gas system
    - geographic information system
    - public land survey system
  B Non-BLM
    - bonus and rental accounting support system
    - production accounting and auditing system
    - auditing and financial system

ASSUMPTIONS

Procurement of computer hardware for ALMRS is based upon the understanding of user needs, present equipment in place, ALMRS Project Office guidance, and qualified by a set of assumptions which form the basis of the analysis.

-This analysis is for a five year period commencing in FY'85. The time period is governed by the Project Office schedule of collecting land description and status. Colorado commenced collection of land description in FY'85 and is scheduled to collect status in FY'88. Optimum equipment configuration should be achieved by FY'90 to satisfy this schedule for all resource areas, districts and state office sections, and provide for adequate public access.

-Terminal and printer needs include location, requirements of users, access to the hardware, volume of on-line transactions/Timeshare access, timely response to data bases, need for slaved printers, need for high speed printers and overall cababilities of acquired hardware.

-Equipment must be Honeywell-compatible to meet specified needs for the planned time period.

-Denver Service Center will provide adequate mainframe support to service state needs in terms of remote access (LIDS), interactive capability, and Timeshare services to access files, tables, and request batch reports--- and most importantly, customer support and reliability. If this is not possible,then---

-SO will upgrade to accomodate stated needs and either batch update DSC with certain information or become part of a distributive processing network.

-This analysis does not include graphics equipment which supports the Geographic Information System link to ALMRS.

-OMRON/RAMTEK, VIP 7205, 7301 terminals are described as part of existing SO and field equipment, but not part of this analysis.

-Links to the state-level data bases by other agencies or private interests are not considered part of this analysis.

-Microcomputers are not considered here. Use of micros to download data for further manipulation/tracking is viewed as an optional enhancement for SO and field office application.

-Existing Honeywell equipment including terminals are part of a Bureauwide maintenance agreement. New terminals and other hardware which are not Honeywell, but are Honeywell-compatible will be covered under maintenance agreements with the associated vendors. Once a maintenance track is established, this new equipment can be considered under a blanket purchase order for time and material.

-As the system becomes operational, certain hard copy records will be retired or replaced: serial pages, historical indices, mining claim microfiche in their present form, various logs, and books containing information on unit and communitization agreements, known geologic structures and environmental analyses.

-A full workload analysis is not indicated to justify a minimum level of equipment and telecommunications. This is amply covered in ALMRS Life Cycle Management and Concept Document.

- It is assumed that ALMRS will fund not only the terminals and printers, but the required ADP and telecommunications support necessary to operate ALMRS.
- Equipment acquisition is expressed as Level I and Level II and defined by user needs keyed to ALMRS development schedules and the expectation that most of the automated data and interfaced BLM files described in the "Introduction" section will be implemented by the end of the five year period.
  - Level I-minimum needs to meet ALMRS requirements
    - State Office
      - enter legal land description
      - expand ability for data entry, query data base, request reports by Branch of L&MO
      - replace OMRON/RAMTEK terminals used for mining claims recordation
      - provide access to Case Recordation/ORCA data by public room users
    - District Offices
      - expand ability for data entry, query data base, retrieve reports by adjudicators and resource management personnel using equipment compatible with Honeywell DPS-8 (ALMRS)and Level 6 (ORCA)
    - Resource Area Offices
      - provide minimum capability for data entry, query data base, retrieve reports by by specialists and technicians using equipment compatible with Honeywell DPS-8 and Level 6
  - Level II Optimum configuration using mainframe at DSC and Level 6 in SO (see Suumary)
    - State Office
      - continue entry of legal land description
      - provide ability to enter and/or verify data for land ownership and status
      - if not accomplished at Level I, replace OMRON/RAMTEK terminals used for mining claims recordation
      - provide public access to case recordation, land ownership and status, mining claim information, and other developed data bases via ORCA or integrated ALMRS
      - provided expanded capability by Branch of L&MO ALMRS case processing aids, management reports and other developed data bases
    - District Offices
      - provide greater capability to more users to access data bases, query and request reports as described above
    - Resource Area Offices
      - same statements for Districts apply

ORGANIZATIONAL ANALYSIS -Terminals and Printers

To be effective and efficient, ALMRS demands access by users. Greater benefits and cost savings will be derived as more users take advantage of the different data bases offered by the system.

The numbers of terminals and printers required at each BLM office location can be determined by considering:

- -land, mineral and resource responsibilities
- -present caseload and caseload diversity
- -federal surface and mineral management acreage
- -public use of records systems
- -present equipment accessable or dedicated to ALMRS-related activity
- -users and volume of usage

The following chart reflects the different kinds of terminals presently being used in state and field offices to access ALMRS. The analysis considers incompatibility as an issue; the solution is acquisition of terminals which can accomplish Level I and II goals and be useable for other Bureau applications.

Office	Terminal	BLMTP	TSS	MINING CLAIMS	ORCA
SO	VIP 7205	NO	YES	NO	NO
DO/RAO	VIP 7301	NO	YES	NO	YES
SO	VIP 7801	YES	YES	NO	YES
SO	TANDBURG	YES	YES	NO	YES
SO/DO/ RAO	RAMTEK/ OMRON	YES	YES	YES	NO

Terminals and printers have been computed on the following pages according to existing organizational structures. Five years from now the organization may change, but information needs will most likely be the same or greater. Function then, becomes the driving force. For either approach, equipment needs should be about the same.

Because ALMRS responsibilities are broken down to the unit level within the Colorado State Office, statewide statistics for case-loads and federal interests are summarized on the following pages. An analysis is currently underway to determine total records responsibilities for Kansas.

ALMRS Project Office has funded the following existing equipment:

5-VIP 7801 terminals
5-Tandburg terminals
3-Talley printers
1 Megabyte of memory for Level 6
16 Port upgrade to the Level 6

AUTOMATED LAND AND MINERAL RECORD SYSTEM
NUMBER OF CASES ON SYSTEM

DATE	AZ	CA	CO	ID	MT	NM	NV	OR	UT	WY	ESO	TOTAL
29 JUN 82	196	22	224	558	657	190	172	15	605	1318	19	3976
26 JUL 82	293	78	515	709	2039	685	1248	60	1075	2328	52	9082
16 AUG 82	326	398	708	997	3512	877	1327	62	1572	3482	156	13417
22 SEP 82	412	643	1135	1510	4953	1305	1691	16	2107	4590	166	18528
27 OCT 82	448	869	1301	1917	5353	1976	1739	751	2868	5198	167	22587
30 NOV 82	494	1132	1348	2217	5848	5329	1924	7665	4073	6506	226	36762
30 DEC 82	545	1342	1488	2326	6314	7306	2250	8076	5459	7975	349	43430
26 JAN 83	569	1619	1761	2518	7900	9154	2926	8929	7276	9327	5697	57676
24 FEB 83	737	1902	1939	2729	9799	14386	6429	9939	9487	13711	7492	78550
30 MAR 83	862	2066	2226	2986	12598	15468	11300	10455	11317	17136	7503	93917
27 APR 83	916	2296	2462	3029	15531	16937	12875	13994	12738	19469	7536	107783
24 MAY 83	954	2439	2898	3343	18009	18292	13021	14004	14229	21148	7692	116029
22 JUN 83	1930	2564	3662	4049	21043	20489	13198	14020	17361	25054	7724	131094
29 JUL 83	4091	3862	5130	4770	24346	24654	13485	14236	19635	35790	7814	157813
29 AUG 83	4169	4360	10448	5340	25094	27886	13846	14326	21587	42474	9772	179302
26 SEP 83	4346	4903	12890	5646	25756	29855	15248	14375	22399	47722	11705	194845
31 OCT 83	4457	5676	13833	5680	26069	30847	15531	14512	23629	48317	11942	200493
30 NOV 83	4491	5998	13945	5744	26233	31785	15667	14663	24662	48788	12066	204042
19 DEC 83	4525	6224	14135	5997	26377	33563	15706	14774	25013	49128	12148	207590
30 JAN 84	4616	6695	14314	6916	26651	36021	15862	14888	25956	50691	12298	214908
29 FEB 84	4639	7031	14505	7201	26950	37279	15962	14888	26735	50960	12427	218577
30 MAR 84	4675	7409	14658	7290	27247	40579	16115	14888	27116	51274	12615	223866
30 APR 84	4706	7990	14775	7429	27446	42806	16260	15314	27239	51590	12898	228453
21 MAY 84	4718	8363	15129	7606	27644	43487	16689	15400	27416	52145	13131	231728
25 JUN 84	4747	8636	15349	7925	28196	45082	16867	15527	27662	52301	13364	235656
30 JUL 84	4807	8996	15480	8210	28420	45840	16963	15633	27731	52516	13535	238131
27 AUG 84	4876	9373	15575	8433	28550	46286	17039	15817	27785	52866	13644	240244
24 SEP 84	4911	9946	15750	8666	28641	46612	17124	15886	27994	53060	13760	242350
29 OCT 84	4972	10346	16161	9039	28773	46768	17886	16141	28757	53970	13842	246655
29 NOV 84	5005	10606	16539	9307	29264	47181	17983	16322	28975	54314	14002	249498
31 DEC 84	5208	10916	16873	9586	29675	47456	18243	16683	29626	55298	14216	253780
28 JAN 85	5292	11040	17149	9711	30041	47881	18277	16814	29662	55675	14319	255861

*

REPORT DATE 1/30/85

PGM 0G222801

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

CASES-PENDING & AUTHORIZED

ADMINISTRATIVE STATE - COLORADO

CASE TYPE	PENDING NO. OF CASES	PENDING ACRES	LEASED/AUTHORIZED NO. OF CASES	LEASED/AUTHORIZED ACRES
004021 SALE- PUB RECL PUB-LND	28	58,231.424	0	0.000
004022 SALE- PUB RECL ACQ-LND	8	223.350	0	0.000
180099 TO BE DEFINED	3	3.000	0	0.000
186001 QUIT CLAIM DEEDS BY GSA	4	1,010.450	0	0.000
186400 RECORDABLE DISCLAIMERS	4	25,180.310	0	0.000
207000 DESIGNATIONS, AREAS,SITE	0	0.000	1	0.000
210000 ACQUISITIONS	7	2,515.900	0	0.000
210099 TO BE DEFINED	12	37.525	0	0.000
211000 DONATION OF LANDS TO US	2	161.810	0	0.000
213000 ACQUISITION-SEC205,FLPMA	16	347.333	1	3.310
213700 CONDEMNATION OF LAND	4	4,904.850	0	0.000
218000 ACQ-OTHER FEDERAL AGCY	1	1.000	15	78.469
220099 TO BE DEFINED	2	81.000	0	0.000
220100 EX- SEC 206,FLPMA	14	5,511.435	0	0.000
221000 EX- STATE	1	2,021.920	0	0.000
222000 EX- PRIVATE	10	1,246.430	0	0.000
223000 EX- NATIONAL FOREST	52	29,777.295	0	0.000
231000 BLM WITHDRAWALS	1	1,491.000	0	0.000
231010 WDL-PUB LND SEC 204FLPMA	1	45,950.000	0	0.000
231701 AIR-NAVIGATION FACILITY	0	0.000	1	252.190
232000 WDL-FED ENERGY REG COMM	65	18,416.966	40	6,783.160
232200 WDL-RECLAMATION	1	205.000	0	0.000
235700 TRANSFER OF JURIDICTION	0	0.000	1	11,493.750
240000 LAND CLASSIFICATION	10	381,670.000	0	0.000
240006 R&PP CLASS	2	881.000	0	0.000
240099 TO BE DEFINED	7	115,902.000	3	3.000
253000 INDIAN ALLOTMENT-GENERAL	1	0.160	14	625.250
253099 TO BE DEFINED	0	0.000	2	6.250
253300 IND ALLOT IN NAT FOREST	1	80.000	1	66.875
254000 COT - COLOR OF TITLE	2	3.100	0	0.000
254100 COT - CLASS 1&2	3	30.300	1	107.690
270000 SALE	0	0.000	1	7,047.000
270099 SALE- TO BE DEFINED	0	0.000	1	212.850
271000 SALE-PUBLIC LANDS-FLPMA	75	7,138.188	13	787.730
272011 SALE- SEC 209 MIN FLPMA	17	6,233.590	1	80.000
274000 SALE- REC & PUB PURPOSES	7	2,874.000	0	0.000
276700 SALE- NF TOWNSITES-FLPMA	2	97.833	0	0.000
280000 RIGHTS OF WAY	1	324.185	14	355.413
280001 R/W-TITLE V ENERGY FLPMA	57	3,209.283	217	2,000.744
280002 R/W-TITLE V NONENE FLPMA	36	386.712	279	1,094.210

REPORT DATE 1/30/85 UNITED STATES DEPARTMENT OF THE INTERIOR
PCN OG222PD1 BUREAU OF LAND MANAGEMENT

CASES-PENDING & AUTHORIZED

ADMINISTRATIVE STATE - COLORADO

CASE TYPE	PENDING NO. OF CASES	PENDING ACRES	LEASED/AUTHORIZED NO. OF CASES	LEASED/AUTHORIZED ACRES
281000 TRAM AND LOGGING RD R/W	0	0.000	3	8.562
281100 TRAM & LOG ROAD-PUB LAND	0	0.000	1	15.150
282000 RD AND HWY R/W	15	15.929	15	37.487
282101 FED AID HIGHWAY(SEC 107)	3	239.027	4	28.710
282103 FED AID HIGHWAY(SEC 317)	5	51.100	15	210.729
282105 FED AID HIGHWAY(SEC 17)	0	0.000	2	32.500
282200 HIGHWAY R/W	0	0.000	3	120.908
282201 ROADS UNDER R.S.2477	4	2,095.396	3	379.910
284000 RR ROADS AND TRAMWAYS	0	0.000	1	1.000
284200 RR & STATIONS OUTSIDE AK	0	0.000	5	23.001
285000 POWER TRANS LINE R/W	81	383.550	62	1,308.256
285001 POWER TRANSMISSION LINE	0	0.000	11	194.104
285002 POWER TRANSMISSION LINE	1	3.605	18	881.492
286000 COMMUNICATIONS	12	11.240	70	310.168
286099 TO BE DEFINED	1	10.927	1	0.147
286100 RADIO & TELEVISION SITES	2	0.126	21	70.895
286200 TELEPHONE & TELEGRAPH	6	40.910	14	32.700
286202 TELEPHONE & TELEGRAPH	0	0.000	14	32.355
287099 TO BE DEFINED	1	0.140	1	6.814
287100 IRRIGATION FACILITIES	1	10.911	11	193.293
287300 WATER PLANTS R/W	2	121.141	18	154.289
287400 D/C EXIST PRIOR TO FLPMA	2	2.000	4	309.292
288000 MINERAL USE PURPOSE R/W	1	14.320	15	599.726
288100 O & G PIPE LINES R/W	41	102.934	206	1,490.888
289500 FEDERAL FACILITY OR R/W	2	49.871	4	242.695
289502 FEDERAL AGENCY R/W	4	376.340	19	7,819.293
290099 TO BE DEFINED	1	6,400.000	0	0.000
291100 AIRPORT LEASES	1	46.000	1	181.400
291200 R AND PP LEASE	12	1,803.440	16	1,063.550
291300 SMALL TRACT LEASES	1	3.000	2	5.690
292000 SPECIAL LAND USE PERMITS	0	0.000	2	12,872.000
292006 PERMITS SEC 302 FLPMA	1	15.560	3	340.284
292020 LEASES SEC 302 FLPMA	9	3,730.670	6	94.840
310099 TO BE DEFINED	0	0.000	1	160.000
310220 O&G LESSEE DUAL FILE	0	0.000	1	1.000
311111 O&G LSE NONCOMP PUB LAND	313	977,015.835	2,597	3,919,248.599
311112 O&G LSE NONCOMP ACQ LAND	156	390,372.405	204	163,257.747
311113 O&G LSE SPECIAL ACTS	5	188.430	40	4,530.470
311211 O&G LSE SIMO PUBLIC LAND	779	1,381,873.300	5,289	5,382,354.530
311212 O&G LSE SIMO ACQ LAND	77	60,591.500	420	275,933.205
312011 O&G LSE COMP PUBLIC	2	680.000	465	134,299.590

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REPORT DATE   1/30/85                            UNITED STATES DEPARTMENT OF THE INTERIOR
                             PCR 0G222P01                 BUREAU OF LAND MANAGEMENT

                                                      CASES-PENDING & AUTHORIZED

 ADMINISTRATIVE STATE - COLORADO
-------------------------------       ------------PENDING------------      ------LEASED/AUTHORIZED--------
          CASE TYPE                   NO. OF CASES            ACRES        NO. OF CASES          ACRES
-------------------------------       ------------------------------       ------------      --------------
 312012 O&G LSE COMP ACQUIRED               0                 0.000            18             3,303.510
 312013 O&G LSE COMP SIOUX ORD              0                 0.000             1               160.000
 313000 O&G LSE FRAC/FUT INT                1                80.000             0                 0.000
 313040 O&G LSE FRAC/FUT INT-ACQ            3               753.540            12             3,073.700
 316000 O&G UNIT AGREEMENT                  0                 0.000             2             5,200.050
 317000 O&G COMMUNITIZATION AGRM            0                 0.000            60            21,289.503
 320099 TO BE DEFINED                       1                 1.000             0                 0.000
 321000 GEO LSE (NON-COMP)                  0                 0.000             1             2,242.200
 340000 COAL MANAGEMENT                     1                 1.000             1                 0.000
 341000 COAL EXPLORATION LICENSE            4            19,112.850             7            26,736.740
 342000 COAL LSE COMPETITIVE                8            13,793.820            39            32,693.850
 343000 COAL LSE NONCOMPETITIVE             1             5,506.590            40            57,740.890
 344000 COAL LICENSE TO MINE                1                10.000             0                 0.000
 350004 SODIUM LEASE                        1             1,200.000             0                 0.000
 350099 TO BE DEFINED                       4             4,600.000             9             4,091.300
 350110 OTHER MIN LSE ON PUB LND            1             5,009.810             0                 0.000
 351001 PROSP PERMIT PUB LAND               1               347.240             0                 0.000
 351002 PROSP PERMITS ACQ                   4             9,240.000             0                 0.000
 380099 TO BE DEFINED                       5                 5.000             0                 0.000
 386200 MINERAL PATENT LODE                 1                20.656             0                 0.000
 386300 MINERAL PATENT PLACER              11             8,289.480             0                 0.000
 386400 MILLSITE PATENTS                    1                58.660             0                 0.000
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TOTAL FOR ADMINISTRATIVE STATE OF COLORADO
                                         1
                                          2,126       3,611,153.84        10,384       10,096,376.90
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Total number of mining claims rocorded: 209,832

****

Federal interests-Colorado

Surface Mgmt	Minerals Mgmt
8,257,674 acres	27,305,066 acres

Figures do not include land or minerals acquired by Corps of Engineers and Bureau of Reclamation. Figures do not include National Park Service Lands (545,346 acres) or Indian Reservations for which BLM has minerals management responsibilities (751,885 acres).

COLORADO STATE OFFICE
DIVISION OF OPERATIONS
BRANCH OF LANDS AND MINERALS OPERATIONS
RECORDS SECTION
DOCKETS, ACCOUNTS, MINING CLAIMS UNIT FIRST FLOOR

Need:
This unit is responsible for entering all new case data and filings for assignments as well as all data entry for mining recordation. Special ALMRS projects* such as land description data capture and proprietor name cleanup are managed from this unit. Future ownership and status data entry and/or verification will occur here. There are also requirements by dockets personnel to check case status and track cases.

Users:
Present--10

Usage:
Present--Terminals are primarily used for land description project, data entry for new applications and filings, examining case data and requesting reports.

Existing equipment:
5-VIP 7801 (1 dedicated to declining deposit accounts)
1-Alanthus T-1220 printer

Additional equipment needs:

Level I -Terminals	: 4	Printers	: 3
Level II-Terminals	: 2	Printers	: 1
Total	: 6		: 4

*Other special projects include original data entry for Known Geologic Structures (350), withdrawals (375), unit (130) and communitization (450) agreements, coal and other leasable mineral cases (125), and miscellaneous lands and mineral patent cases (175).

COLORADO STATE OFFICE
DIVISION OF OPERATIONS
BRANCH OF LANDS AND MINERALS OPERATIONS
RECORDS SECTION
PUBLIC SERVICE UNIT FIRST FLOOR

Need:
This unit responds to numerous inquiries related to land status and ownership. Mail and telephone orders for case abstracts from 20 to 200 per day are not unusual. As ALMRS develops, requests for alpha-numeric status reports and other data base information will increase.

Users:
Present--6

Usage:
Present--Terminal and printer are primarily used to query data base and request case abstracts on-line or utilize mass request routine available on BLMTP.

Existing equipment:
1-Tandburg terminal
1-Talley printer

Additional equipment needs:

Level I	-Terminals: 1	Printers: 1
Level II	-Terminals: 1	Printers: 1
Total	: 2	: 2

COLORADO STATE OFFICE
DIVISION OF OPERATIONS
BRANCH OF LANDS AND MINERALS OPERATIONS
PUBLIC ROOM FUNCTIONS (TWO AREAS) FIRST FLOOR

Need:
By allowing public access to principle data bases of ALMRS, it will reduce the necessity of maintaining several manual records, and require less direct assistance by personnel freeing them for other work. Depending upon system configuration, it will be possible to access any state’s data base for case data, ownership and other status including mining claims.

Users:
Present--10 to 30 public (Includes land records and docket/mining claims areas.

Usage:
Present--One terminal is scheduled to be placed in public room to access ORCA in April 1985.

Existing equipment:
1-Tandburg terminal

Additional equipment needs:
Level I -Terminals: 6 Printers: 4
Level II-Terminals: 6 Printers: 3
Total :12 : 7

COLORADO STATE OFFICE
DIVISION OF OPERATIONS
BRANCH OF LANDS AND MINERALS OPERATIONS
RECORDS SECTION
LAND STATUS UNIT

SECOND FLOOR

Need:
This unit has the primary responsibility for ALMRS data entry and day-to-day user support. Maintenance of current information for case data, ownership and other status, and land description will increase as ALMRS develops.

Users:
Present--8

Usage:
Present--Terminals and printer are primarily used for maintenance of case data, query and requesting of reports and indices that facilitate records improvement projects, elimination of backlogs and preparation of oil and gas simultaneous list.

Existing equipment:
2-VIP 7801 terminals
1-Tandburg terminal
1-Talley printer

Additional equipment needs:
Level I -Terminals: 3   Printers: 1
Level II-Terminals: 4   Printers: 2
Total   : 7   : 3

COLORADO STATE OFFICE
DIVISION OF OPERATIONS
BRANCH OF LANDS AND MINERALS OPERATIONS
MINERAL LEASING SECTION
THIRD FLOOR

Need:
This section is responsible for entering specific case actions on the present ALMRS data base. Personnel also query the data base and request numerous reports for management purposes. As the ALMRS system develops, there will be greater need to access the land description, land ownership and status files, stipulation and regulation reference files, other BLM interfaced files and systems.

Users:
Present--14

Usage:
Present--Terminals and printer are primarily used to maintain case data, query data base and request reports.

Existing equipment:
2-Tandburg terminals
1-Talley printer

Additional equipment needs:

Level I -Terminals: 4	Printers: 2
Level II-Terminals: 4	Printers: 2
Total : 8	: 4

COLORADO STATE OFFICE
DIVISION OF OPERATIONS
BRANCH OF LANDS AND MINERALS OPERATIONS
LANDS, WITHDRAWAL REVIEW AND GENERAL MINING LAW SECTION

THIRD FLOOR

Need:
This section is responsible for data entry and update of pre-ALMRS lands and mineral patent cases, and withdrawal cases for which final determination has been made to enter into ALMRS. Also, query of present and future data bases described for the Mineral Leasing Section applies for Lands Section.

Users:
Present--7

Usage:
Present--Terminals and printer are primarily used to maintain case data, query data base and request reports.

Existing equipment:
None-Equipment is shared with Mineral Leasing Section

Additional equipment needs:

Level I -Terminals: 2	Printers: 1
Level II-Terminals: 2	Printers: 1
Total : 4	: 2

COLORADO STATE OFFICE
DIVISION OF OPERATIONS
BRANCH OF CADASTRAL SURVEY
BRANCH OF CARTOGRAPHY

FOUR LOCATIONS

Need:
These Branches have similar data base access requirements as the system develops for the land description file, ownership and status file, geographic coordinates, and their interface with the public land survey and geographic information systems.

Users:
Present--None. All requests for information are made to the Branch of Lands and Minerals Operations.

Usage:
See preceding note

Existing equipment:
None

Additional equipment needs: For 2 Branches, 4 locations

Level I -Terminals	: 2	Printers: 2
Level II-Terminals	: 4	Printers: 4
Total	: 6	: 6

COLORADO STATE OFFICE
DIVISION OF RESOURCES
A-BRANCH OF LANDS AND RECREATION
B-PLANNING AND ENVIRONMENTAL COORDINATION STAFF TENTH FLOOR

Need:
A-This Branch which provides program direction for land, right of way and withdrawal activities has needs for ALMRS present and future data bases for query, analysis and reporting purposes.
B-This staff has needs for ALMRS files of stipulations, resource data, ownership and status, and geographic information system for planning and environmental analysis purposes.

Users:
Present--All requests for information are processed by the Branch of Lands and Minerals Operations

Usage:
See preceding note

Existing equipment:
None

Additional equipment needs: For A and B
Level I -Terminals: 1 Printers: 1
Level II-Terminals: 2 Printers: 2
Total: : 3 : 3

COLORADO STATE OFFICE
DIVISION OF MINERALS
BRANCH OF FLUID MINERALS ELEVENTH FLOOR

Need:
This Branch which provides program direction for fluid leasing activities and manages the Known Geologic Structure (KGS) determination and clearance program for Colorado has needs to access ALMRS present and future data bases for query, analysis and reporting purposes.

Users:
Present--None. All requests for ALMRS data are made to Branch of Lands and Minerals Operations

Usage:
See preceding note

Existing equipment:
None

Additional equipment needs:
Level I -Terminals: 2 Printers: 1
Level II-Terminals: 2 Printers: 1
Total: : 4 : 2

COLORADO STATE OFFICE
DIVISION OF MINERALS
BRANCH OF SOLIDS, MINING AND SALABLES ELEVENTH FLOOR

Need:
This Branch which provides program direction for solid minerals leasing activities, mining claim recordation and patenting, and salable minerals has needs to access ALMRS present and future data bases for query, analysis, and reporting purposes

Users:
Present--None. This section is dependent upon SLIMS, ALMRS and the mining claims recordation program for information from the Branch of Land and Minerals Operations.

Usage:
See preceding note

Existing equipment:
None

Additional equipment needs:
Level I -Terminals: 1 Printers: 1
Level II-Terminals: 2 Printers: 1
Total: : 3 : 2

CRAIG DISTRICT OFFICE
A-LITTLE SNAKE RESOURCE AREA OFFICE
B-WHITE RIVER RESOURCE AREA OFFICE
C-KREMMLING RESOURCE AREA OFFICE

FOUR LOCATIONS

Need:
Craig is characterized as being a district with a high level of intensity, complexity and diversity due to large amounts of oil and gas, coal, oil shale and rights of way. Primary adjudication for lands cases occurs at the district office with additional delegation being passed along to the White River Area. Following is a breakdown of federal interests, present caseloads, and caseload diversity in the Craig District:

	Surface Mgmt	Minerals Mgmt*
Craig	3,161,880 acres	6,942,368 acres

*Includes Natl For and reserved minerals

ALMRS CASETYPES-PENDING AND AUTHORIZED

	21	22	23	24	27	28	29	31	34	35	38
Craig	6	22	18	7	11	241	35	4021	55	19	4
A	1	4	1	–	2	42	2	2076	10	17	–
B	–	6	5	3	8	180	5	1647	15	2	4
C	5	12	12	4	1	19	–	381	6	–	–

Figures will not add up because present ALMRS administrative area reporting capability is not precise.
There are approximately 1250 rights of way not entered in ALMRS.

As ALMRS develops there will be greater need to access the full system by BLM personnel and regional publics where offices are located.

Users:
Present--5 at district office
-2 to 4 at each area office

Usage:
Present--Data entry and update of lands cases. On-line retrieval of lands and minerals case data, and request and retrieval of reports.

Existing equipment:
Craig-1-VIP 7301
1-Alanthus T-1220 printer
A -1-VIP 7301
1-TI810 printer
B -1-TI810 printer
C -1-TI810 printer

Additional equipment needs:

		Terminals:	Printers:
Level I	Craig	2	2
	A	1	1
	B	2	2
	C	1	1
Level II	Craig	2	2
	A	2	1
	B	2	2
	C	1	1
Total		: 13	: 12

MONTROSE DISTRICT OFFICE
A-UNCOMPAHGRE RESOURCE AREA OFFICE
B-GUNNISON RESOURCE AREA OFFICE
C-SAN JUAN RESOURCE AREA OFFICE FOUR LOCATIONS

Need:
Montrose is characterized as being a district with a high level of intensity, complexity and diversity due to large amounts of oil and gas, CO2, rights of way, mining activity, permits and leases, archeological resources, "four corners" activities and Native American lease management responsibilities. Following is a breakdown of federal interests, present caseloads, and caseload diversity in the Montrose District.

	Surface Mgmt	Minerals Mgmt*
Montrose	2,078,592 acres	7,997,806 acres

*Includes Nat For and reserved minerals

ALMRS CASETYPES-PENDING AND AUTHORIZED

	18	21	22	23	24	25	27	28	29	31	34	35	38
Montrose	5	41	27	53	5	1	34	462	20	1946	30	1	5
A	1	11	9	37	1	1	28	189	11	421	27	-	1
B	-	10	8	9	3	1	4	88	3	38	1	1	4
C	4	21	13	10	2	-	1	183	6	1506	-	-	-

Figures will not add up because present ALMRS administrative area reporting capability is not precise.
There are approximately 700 rights of way not entered into ALMRS.

As ALMRS develops there will be greater need to access the full system by BLM personnel and regional publics where offices are located.

Users:
Present--5 at district office
-2 to 4 at each area office

Usage:
Present--Data entry and update of lands cases. On-line retrieval of lands and minerals case data, and request and retrieval of reports.

Existing equipment:
Montrose-1-VIP 7301
1-Alanthus T-1220 printer
A -1-VIP 7301
-1 Alanthus T-1220 printer
B -1 VIP 7301
-1 Alanthus T-1220 printer
C- -1 VIP 7301
-1 Alanthus T-1220 printer

Additional equipment needs:

		Terminals:	Printers:
Level I	Montrose	2	2
	A	1	1
	B	1	1
	C	2	2
Level II	Montrose	2	2
	A	1	1
	B	1	1
	C	2	2
Total		: 12	: 12

CANON CITY DISTRICT OFFICE
A-SAN LUIS RESOURCE AREA OFFICE
B-ROYAL GORGE RESOURCE AREA OFFICE
C-NORTHEAST RESOURCE AREA OFFICE FOUR LOCATIONS

Need:
Canon City is characterized as being a district with a medium level of intensity, complexity and diversity. There are lands and rights of way actions which require greater attention due to their proximity to large population areas, mining claim, and oil and gas activity, and responsibility for all delegated action to manage federal interests in Kansas. Following is a breakdown of federal interests, present caseloads, and caseload diversity in the Canon City District.

	Surface Mgmt	Minerals Mgmt*
Canon City	1,253,643 acres	9,060,929 acres

*Includes Natl For, grasslands and reserved minerals
Above figures do not include any statistics for Kansas.

ALMRS CASETYPES-PENDING AND AUTHORIZED

	18	21	22	23	24	25	27	28	29	31	32	34	38
Canon	1	11	20	38	5	5	26	217	18	2331	1	2	3
A	-	1	8	14	2	2	8	78	7	232	1	1	2
B	1	2	6	8	4	1	8	116	5	1023	-	2	2
C	-	8	7	20	1	2	9	47	4	869	-	-	-
Kansas	4	1	-	4	1	-	1	1	-	263	-	-	-

Figures will not add up because present ALMRS administrative area reporting capability is not precise.
There are approximately 1500 rights of way not entered in ALMRS.

As ALMRS develops there will be greater need to access the full system by BLM personnel and regional publics where offices are located.

Users:
Present--5 at district office
-2 at each area office

Usage:
Present--Data entry and update of lands cases. On-line retrieval of lands and minerals case data, and request and retrieval of reports.

Existing equipment:
Canon-2-VIP 7301
1-Alanthus T-1220 printer
A 1-TI 810 printer
B 1-VIP 7301
1-Alanthus T-1220 printer
C 1-TI-810 printer

Additional equipment needs:

		Terminals	Printers
Level I			
	Canon	2	2
	A	1	1
	B	1	1
	C	1	1
Level II			
	Canon	2	2
	A	1	1
	B	1	1
	C	1	1
Total		: 10	: 10

GRAND JUNCTION DISTRICT OFFICE
GRAND JUNCTION RESOURCE AREA OFFICE
GLENWOOD SPRINGS RESOURCE AREA OFFICE THREE LOCATIONS

Need:
Grand Junction is characterized as a district with a high level of intensity, complexity and diversity. Principal activities include oil and gas, coal leasing and rights of way actions. There are many public inquiries made in Grand Junction because of its size and location. Following is a breakdown of federal interests, present caseloads, and caseload diversity in the Grand Junction District.

	Surface Mgmt	Minerals Mgmt*
Grd Jct	1,763,559 acres	4,055,848 acres

*Includes Nat For and reserved minerals

ALMRS CASETYPES-PENDING AND AUTHORIZED

	20	21	22	23	24	25	27	28	29	31	32	34	38
Grd Jct	1	20	21	20	3	1	42	397	9	1804	1	19	7
A	-	-	3	13	-	-	1	256	1	1326	1	12	7
B	1	-	18	7	3	1	41	141	7	511	-	7	-

Figures will not add up because present ALMRS administrative area reporting capability is not precise.
There are approximately 700 rights of way not entered in ALMRS

As ALMRS develops there will be greater need to access the full system by BLM personnel and regional publics where offices are located.

Users:
Present--6 at district office
-2 to 4 at each area office

Usage:
Present--Data entry and update of lands cases. On-line retrieval of lands and minerals case data, and request and retrieval of reports.

Existing equipment:
Grd Jct-1-VIP 7301
1-Alanthus T-1220 printer
2-TI-810 printers
A -1-TI-810 printer
B -1-TI-810 printer

Additional equipment needs:

		Terminals	Printers
Level I	Grd Jct	3	3
	A	1	1
	B	1	1
Level II	Grd Jct	2	2
	A	1	1
	B	1	1
Total		9	9

SUMMARY TABLE -TERMINALS AND PRINTERS

	LEVEL I		LEVEL II		TOTAL	
OFFICE/LOCATION	TERM	PRINT	TERM	PRINT	TERM	PRINT
STATE OFFICE						
L & M 1ST FLOOR	11	8	9	5	20	30
L & M 2ND FLOOR	3	1	4	2	7	3
L & M 3RD FLOOR	6	3	6	3	12	6
CARTO 2ND FLOOR	1	1	2	2	3	3
SURVEY 4TH FLR	1	1	2	2	3	3
RESOURCES 10TH FLR	1	1	2	2	3	3
MINERALS 11TH FLR	2	1	4	2	6	3
DISTRICTS						
CRAIG DO	2	2	2	2	4	4
LITTLE SNAKE RA	1	1	2	1	3	2
WHITE RIVER RA	2	2	2	2	4	4
KREMMLING RA	1	1	1	1	2	2
MONTROSE DO	2	2	2	2	4	4
UNCOMPAHGRE RA	1	1	1	1	2	2
GUNNISON RA	1	1	1	1	2	2
SAN JUAN RA	2	2	2	2	4	4
CANON CITY DO	2	2	2	2	4	4
SAN LUIS RA	1	1	1	1	2	2
ROYAL GORGE RA	1	1	1	1	2	2
NORTHEAST RA	1	1	1	1	2	2
GRAND JUNCTION DO	3	3	2	2	5	5
GRAND JUNCTION RA	1	1	1	1	2	2
GLENWOOD SPRGS RA	1	1	1	1	2	2
TOTAL	47	38	51	39	98	77

This analysis reviews needs to satisfy Level I and Level II requirements as set forth in previous sections.

Colorado has a flexible data communications network installed between the State Office and District Offices. Each DO has the capability to expand to 30 channels. The busiest DO utilizes 14 channels; the least busy DO utilizes 8 channels. Colorado does lack, however, in telecommunications capability providing data channels from Resource Area Offices to DO. RAOs utilize a FX line (with a DO, central office number) or a local business line; some RAOs have both lines.

For most RAOs, the telecommunications upgrade requires installation of a 4 channel multiplexor network between these offices and their respective DOs. At the DO, RAO channels would connect to the larger multiplexor, allowing direct channels from RAOs into the SO telecommunications center. Colorado's microwave system, presently being installed, would provide link channels for all RAO telecommunications lines.

Central processing unit and peripheral equipment available to ALMRS at the SO are lacking. The SO Level 6 computer has one 350 mbyte disk drive available for ALMRS files which provides storage for ORCA and other ALMRS-related files. This storage could be exhausted in two years. With other applications existing and coming on-line over and above ALMRS, the Level 6 CPU capabilities will be meeting saturation. Once ORCA is made operational, CPU response time is expected to become excessive. In the interim, additional telecommunications ports are required on the Level 6 to accomodate user needs.

To accomodate Level I requirements, Colorado needs the following equipment and services:

Honeywell VIP-compatible terminals	47
Read only printers (slaved to terminals)	38
Infotron 680 dual asynchronous channel cards	20
Four channel statistical multiplexors	6
Eight channel statistical multiplexors	4
Standard 212A compatible modems	8
Infotron 790 dual asynchronous channel cards	8
Additional CPU channels	40

Total cost: $209,000

Maintenance costs for this equipment for five year period:

Total cost: $131,000

Miscellaneous items and support services for five year period:

Miscellaneous-interface cable, supplies, interface switches, disk packs, wiring: $40,000

Support-workmonths by SO, DO ADP/telecommunications personnel (4WM/yr @ $3,000 x 5yr) $60,000

Data telecommunications lines will be placed on Colorado's microwave system as links become available. In the interim, FX lines or 4-wire 3002 lines must be common carrier leased.
Total cost: $41,000

To accomodate Level II requirements, Colorado needs the following equipment and services (includes Level I):

Honeywell VIP-compatible terminals	98
Read only printers	77
Infotron 680 dual asynchronous channel cards	36
Four channel statisitical multiplexors	8
Eight channel statistical multiplexors	4
Standard 212A compatible modems	16
Infotron 790 dual asynchronous channel cards	12
Additional CPU channel cards	77

Total cost: $370,000

Maintenance costs for this equipment for five year period:

Total cost: $230,000

Miscellaneous items and support services for five year period:

Miscellaneous-	$50,000
Support-5WM @ 3,000 x 5yr	$75,000

Data telecommunications costs to accomodate Level II require an additional $9,000- $50,000

CPU requirements at SO for ALMRS, Level I and Level II have not been addressed except for telecommunications ports. The existing Honeywell Level 6 computer will not support a full Level I effort. Upgrade of the Level 6 to a high-end minicomputer similar to a DPS 6/96 would support a Level I effort, but not a Level II effort.

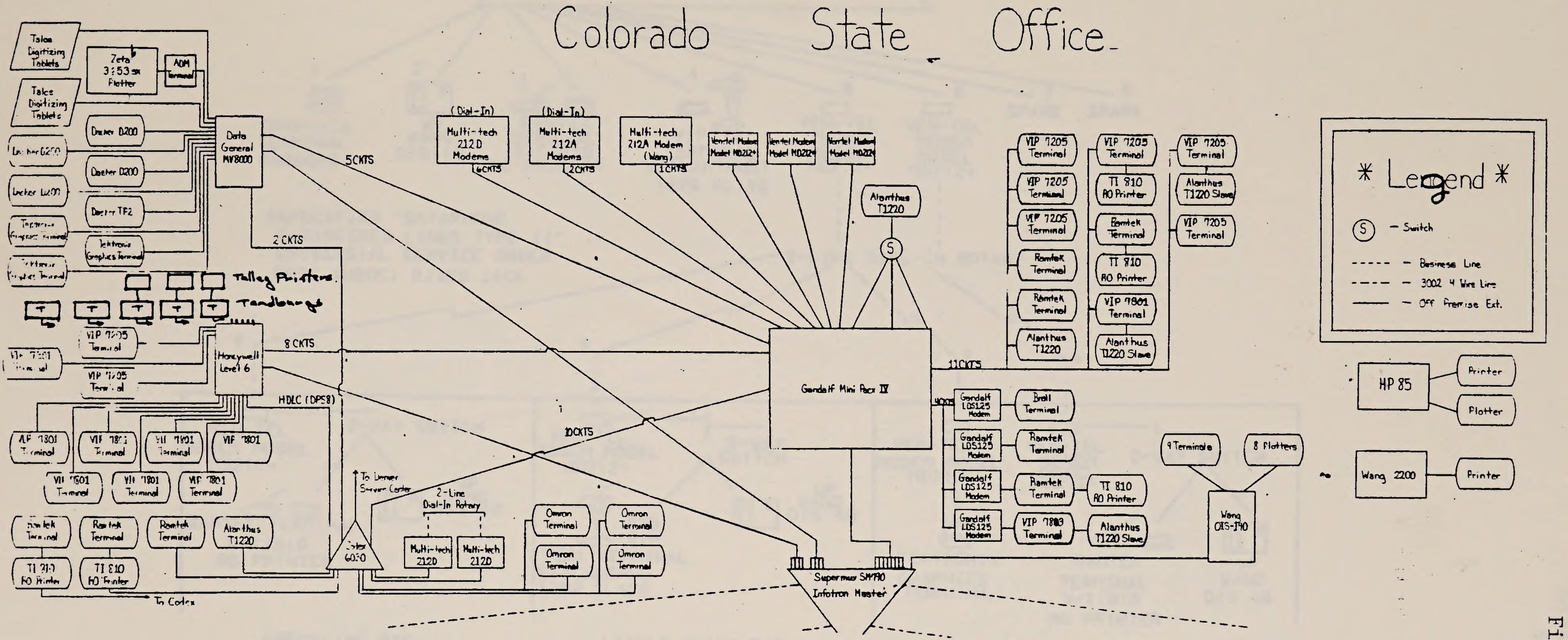
LEVEL I
SUMMARY TABLE

Office	ADP Equip	Comm Equip	Comm Lease Facilities	Equip Maint	WM Support	Misc	Total$
SO	53,912	28,072	0	64,977	36,000	20,000	202,966
01	15,006	28,488	3,000	21,849	6,000	5,000	79,343
03	15,006	17,488	15,600	18,849	6,000	5,000	79,583
05	12,505	13,752	17,400	14,624	6,000	5,000	69,281
07	12,505	12,152	5,040	11,061	6,000	5,000	51,758
Total$	108,934	99,957	41,040	131,000	60,000	40,000	480,000

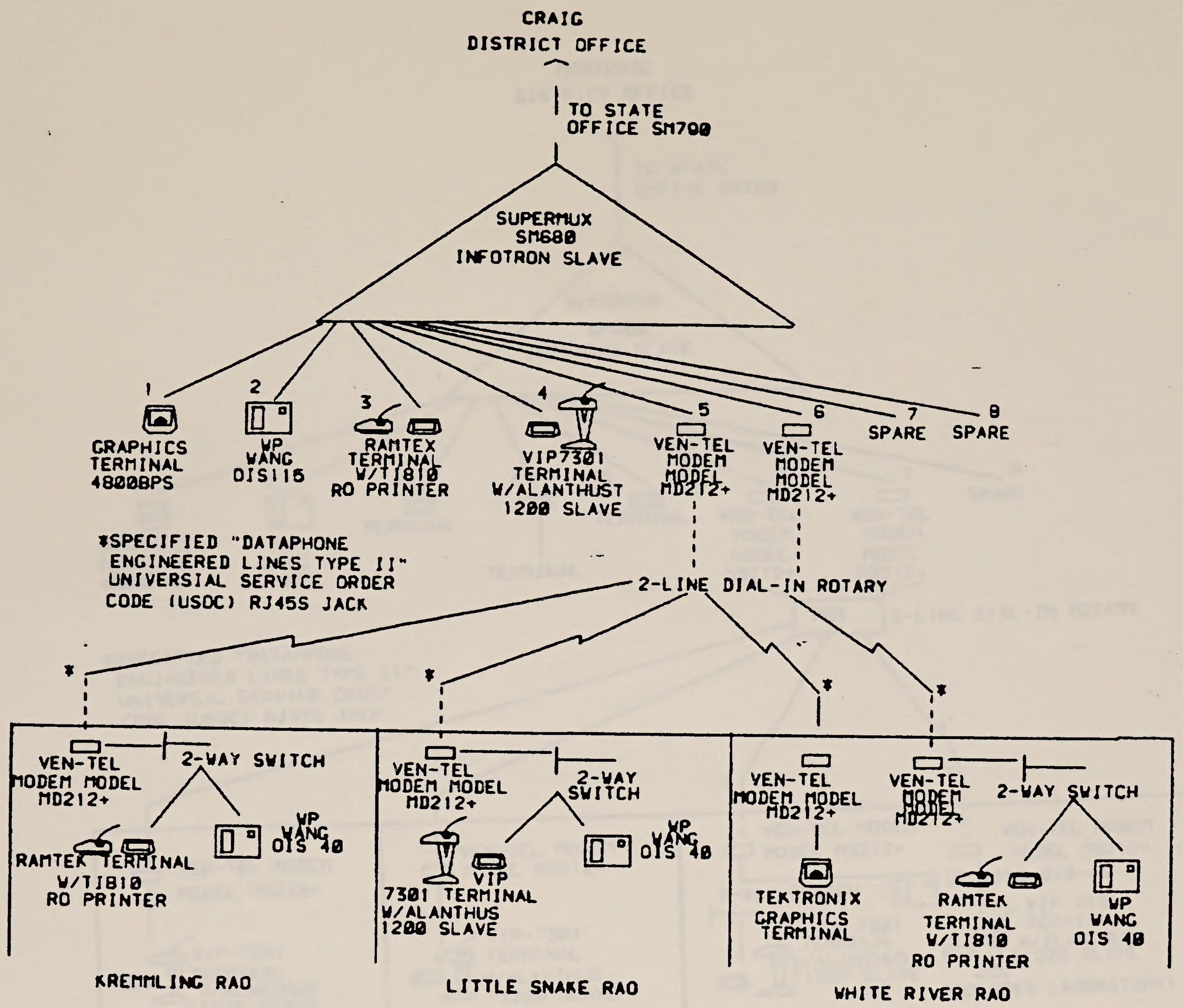
LEVEL II
SUMMARY TABLE

Office	ADP Equip	Comm Equip	Comm Lease Facilities	Equip Maint	WM Support	Misc	Total$
SO	115,913	52,733	0	111,944	51,000	26,000	357,590
01	31,556	32,392	4,500	36,539	6,000	6,000	116,987
03	30,012	30,792	20,400	35,826	6,000	6,000	129,030
05	25,010	16,120	20,400	25,696	6,000	6,000	99,226
07	22,509	12,920	5,040	19,995	6,000	6,000	72,464
Total$	225,000	144,957	50,340	230,000	75,000	50,000	775,297

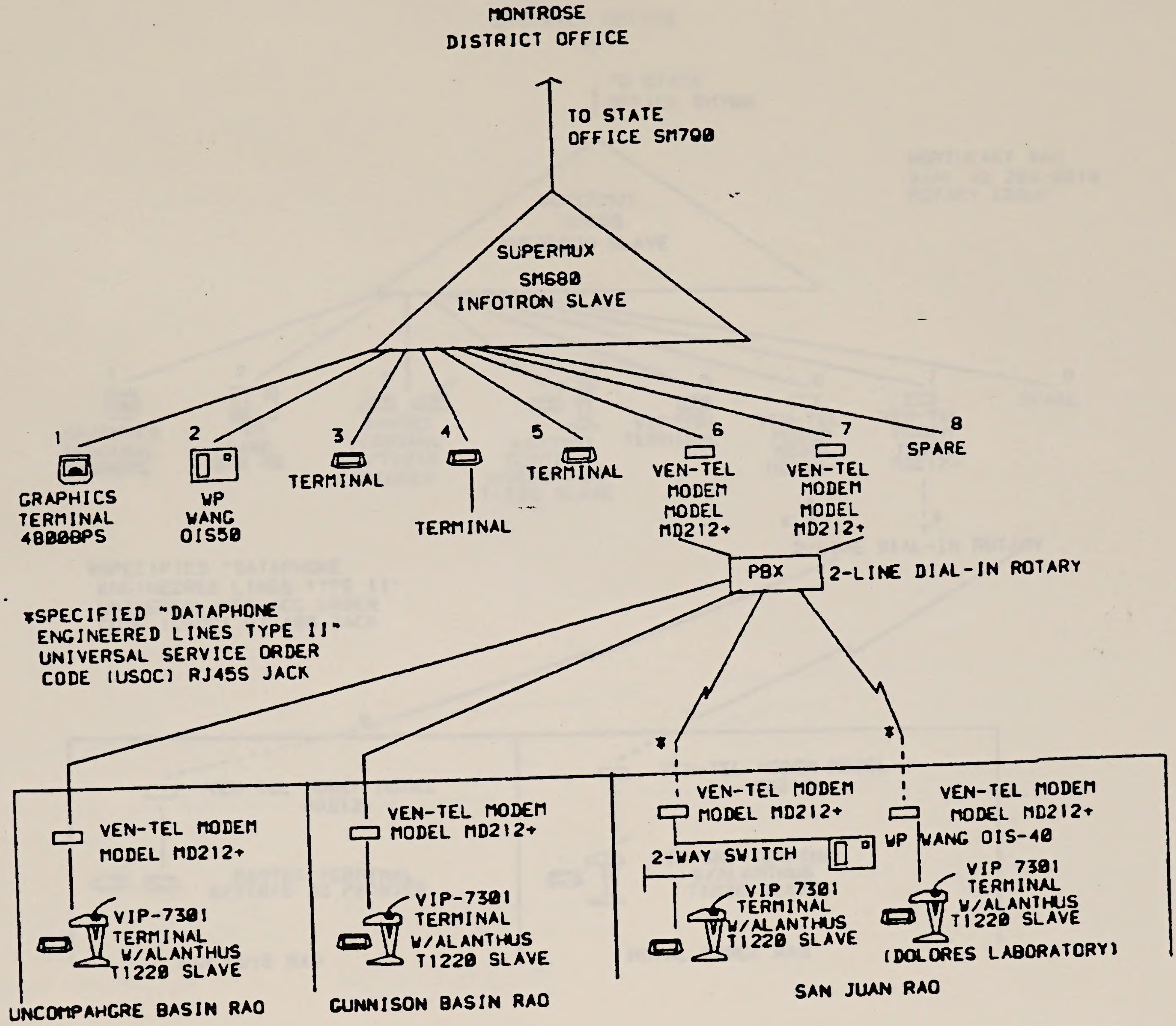
APPENDICES



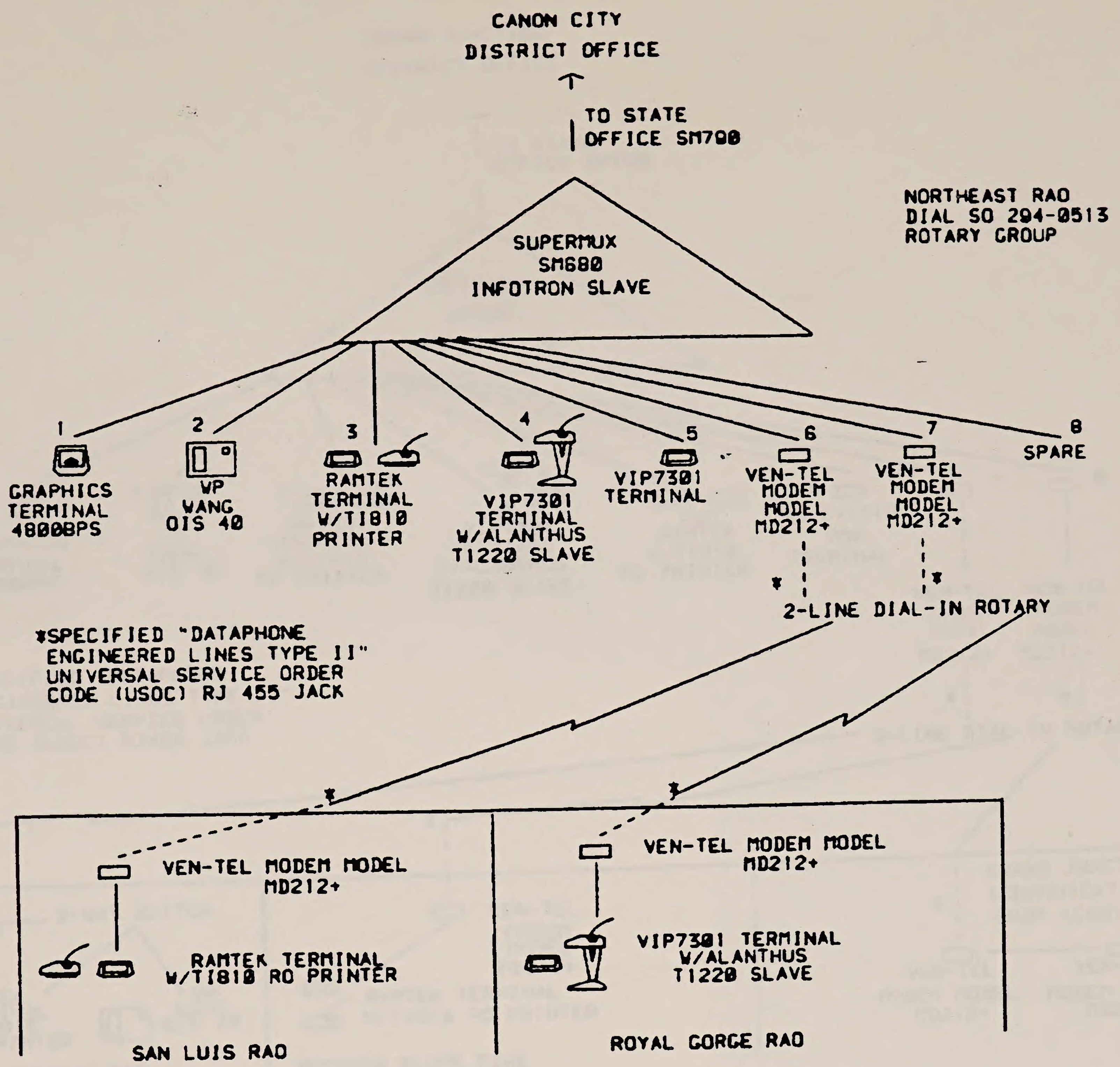
State Office
Figure 1



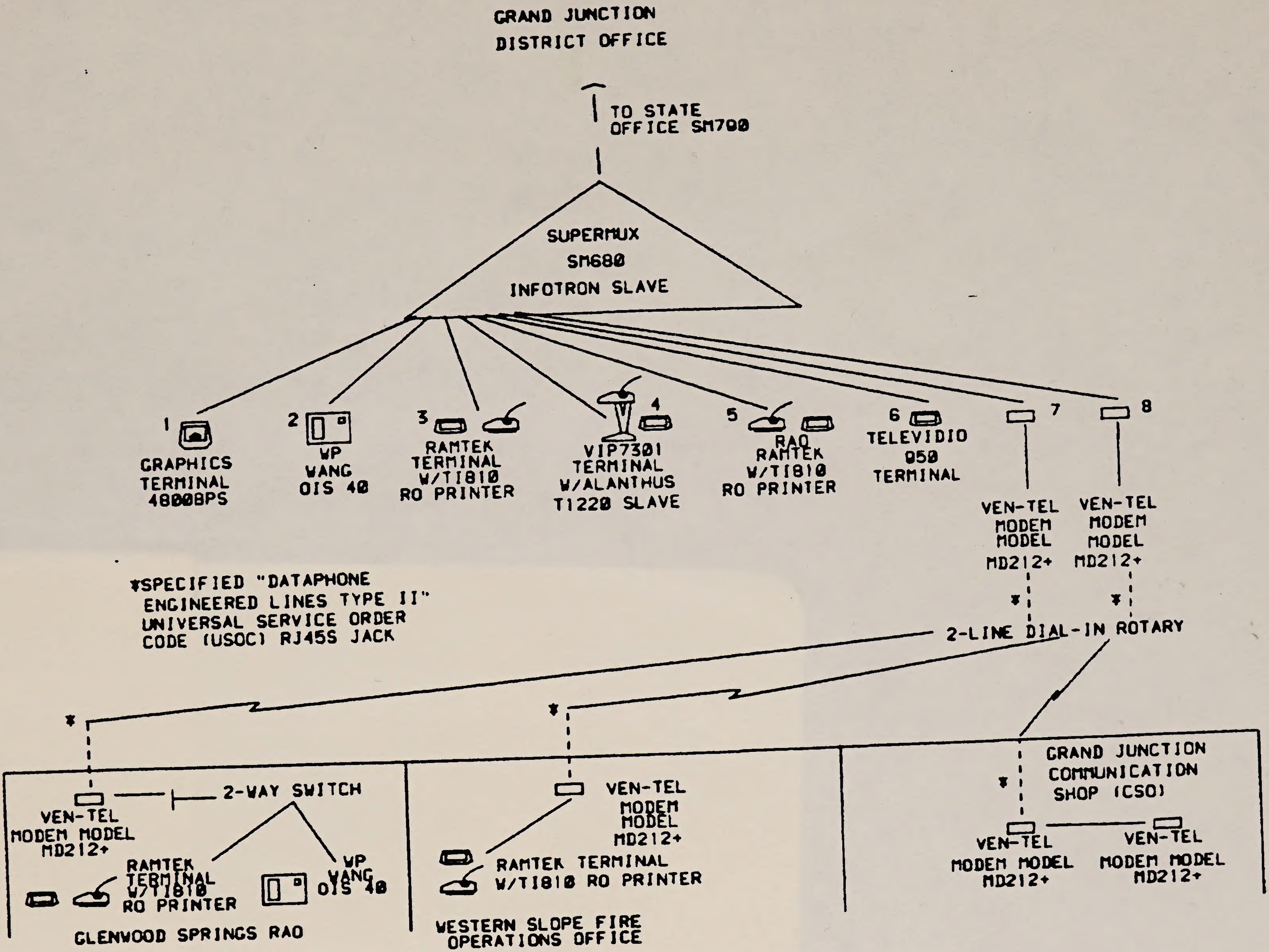
Craig District
Figure 2



Montrose District
Figure 3



Canon City
Figure 4


GRAND JUNCTION
DISTRICT OFFICE
TO STATE OFFICE SM700
SUPERMUX
SM680
INFOTRON SLAVE
1
GRAPHICS TERMINAL 4800BPS
2
WP WANG OIS 40
3
RAMTEK TERMINAL W/TI810 RO PRINTER
4
VIP7301 TERMINAL W/ALANTHUS T1220 SLAVE
5
RAO RAMTEK W/TI810 RO PRINTER
6
TELEVIDIO 950 TERMINAL
7
8
VEN-TEL MODEM MODEL MD212+
VEN-TEL MODEM MODEL MD212+
*
*
*SPECIFIED "DATAPHONE ENGINEERED LINES TYPE II" UNIVERSAL SERVICE ORDER CODE (USOC) RJ45S JACK
2-LINE DIAL-IN ROTARY
*
*
*
VEN-TEL MODEM MODEL MD212+
2-WAY SWITCH
RAMTEK TERMINAL W/TI810 RO PRINTER
WP WANG OIS 40
GLENWOOD SPRINGS RAO
VEN-TEL MODEM MODEL MD212+
RAMTEK TERMINAL W/TI810 RO PRINTER
WESTERN SLOPE FIRE OPERATIONS OFFICE
GRAND JUNCTION COMMUNICATION SHOP (CSO)
VEN-TEL MODEM MODEL MD212+
VEN-TEL MODEM MODEL MD212+

Grand Junction
Figure 5

BLM Library
D-553A, Building 50
Denver Federal Center
P. O. Box 25047
Denver, CO 80225-0047

BLM Library
D-553A, Building 50
Denver Federal Center
P. O. Box 25047
Denver, CO 80225-0047